



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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April 13, 2004

Lonnie Monaco (monacolj@efane.northdiv.navy.mil)
Engineering Field Activity Northeast, Naval Facilities Engineering Command
Code 1821/LM
10 Industrial Highway, Mailstop 82
Lester, PA 19113-2090

**Re: Draft Long Term Monitoring Plan for Site 9, Ash Landfill/Dump Area, dated
February 2004 for the Naval Air Station Brunswick, Maine**

Dear Mr. Monaco:

Pursuant to § 6 of the Naval Air Station Brunswick, Maine Federal Facility Agreement dated October 19, 1990, as amended (FFA), the Environmental Protection Agency has reviewed the subject document and comments are below:

General Comments:

1. Monitoring has been carried out for Site 9 since 1995, following adoption of an Interim Groundwater ROD in 1994. The monitoring has followed a Long-Term Monitoring Plan (LTMP) prepared in 1994. Since that time, the site has undergone a five-year review (2000), further characterization has been done (e.g., a direct-push soil and groundwater investigation, 2003), and alterations to the site (e.g., demolition of old structures, soil removal, etc.) are currently proposed by Navy. For these reasons, it is appropriate that the LTMP be revisited at this time.

2. The Draft LTMP does not seem to acknowledge changes (construction, soil removal, etc.) to the site currently under consideration by Navy that may affect the LTMP. Also, results of further characterization that has been discussed recently (e.g., drive-point sampling of groundwater on the west side of the site) may have implications for the LTMP. What process will be followed to adapt the LTMP to these potential changes in the site and its characterization?

Specific Comments:

3. **p. 1-7, Sec. 1.4.1:** The first bullet notes that three wells will be sampled for inorganics: MW-NASB-069, MW-NASB-70, and MW-NASB-079. Analysis for TAL metals is strongly endorsed for the reason given in the LTMP, i.e., that groundwater downgradient of the fill may be impacted by metals, which the direct-push investigation found to be elevated in the ash (e.g., Sb, Cu, Pb, Zn). The three wells selected for this analysis form a "fence" across the site, just downgradient of the mapped fill material, and, for this reason, appear to be well chosen. However, please note that Figure 1-3 shows an interpretation of the hydraulic potential surface that suggests that MW-NASB-070 is not directly downgradient of the mapped

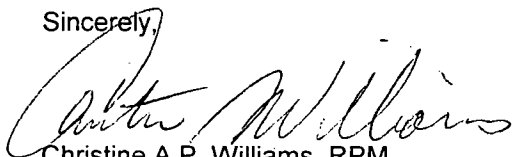
fill, but may receive flow originating farther to the east. Consideration might be given to reallocating the low-flow sampling and TAL analysis to another well that is more likely to receive impacts from the source area. Candidates might include MW-NASB-071, -076, or -072, which lie roughly in a line running from MW-NASB-079 (which historically has shown reducing conditions and elevated metals) to the ponds.

4. **p. 3-4, Sec. 3.3:** The summary of Analytical Parameters and Procedures points to Table 3-1 for the proposed parameters for the seep, surface water, and sediment. The table indicates that these media are to be sampled only for VOCs. What rationale can be offered for omitting analysis for TAL metals, particularly in the seep and sediment? Have these media been analyzed previously for inorganics, and shown to be acceptably low? Given that upgradient soil is known to be high in metals (particularly the ash fill), and that groundwater is being monitored for potential impacts, there is reason to believe that the seep and sediment should be analyzed for inorganics. In particular, if groundwater is reducing, and elevated in metals (as has been found for MW-NASB-079), this groundwater likely discharges to surface water in the downgradient area. Upon reaching a redox interface at the point of discharge, the reduced iron is oxidized, and other metals accompanying the iron are removed from solution by adsorption. Thus, there is potential for metals to accumulate in sediment. Please add TAL metals analysis for the seep, surface water, and sediment samples. If analytical results for the seep, surface water, and sediment demonstrate that inorganics are not a concern for these media, the TAL metals analysis can be dropped from future sampling rounds.

If the seep is sampled for inorganics, procedures should be developed to address some of the uncertainties seen, for example, in analyses on seep samples from Site 2. That is, it is apparent that the seep samples are plagued by variable levels of particulates (e.g., iron floc) that result in highly variable analyses for metals. It is recommended that the seep samples be filtered at the laboratory, and that both the filtered solution and the filter-cake solids be analyzed separately (the latter on a dry-weight basis), in order to provide complete sample characterization. Otherwise, results obtained from the seep samples are difficult to interpret, as it is not possible to distinguish between trace metals that are present as aqueous species and those that have precipitated, under oxidizing conditions, as solid phases.

If you have any questions with regard to this letter, please contact me at (617) 918-1384.

Sincerely,



Christine A.P. Williams, RPM
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